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Cambridge International Examinations
Cambridge International General Certificate of Secondary Education

COMPUTER SCIENCE **0478/22**

Paper 2 Problem-solving and Programming **May/June 2017**

PRE-RELEASE MATERIAL

No Additional Materials are required.

This material should be given to the relevant teachers and candidates as soon as it has been received at the Centre.

READ THESE INSTRUCTIONS FIRST

Candidates should use this material in preparation for the examination. Candidates should attempt the practical programming tasks using their chosen high-level, procedural programming language.

The syllabus is approved for use in England, Wales and Northern Ireland as a Cambridge International Level 1/Level 2 Certificate.

This document consists of **2** printed pages.

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In preparation for the examination candidates should attempt the following practical tasks by **writing and testing a program or programs**.

The organiser of a senior citizens' club arranges outings for the members. For each of these outings a coach is hired, meals at a restaurant are reserved and tickets for the theatre are booked. A program is required to work out the costs and provide a printed list showing everyone on the outing.

Write and test a program for the club organiser.

- Your program must include appropriate prompts for the entry of data.
- Error messages and other output need to be set out clearly.
- All variables, constants and other identifiers must have meaningful names.

You will need to complete these **three** tasks. Each task must be fully tested.

TASK 1 – Work out the total cost of the outing.

The organiser finds out how many senior citizens would be interested in the outing. The program for TASK 1 works out the cost from this information.

Number of people	Hire of coach ($)	Cost of a meal ($)	Cost of a theatre ticket ($)
12–16	150	14.00	21.00
17–26	190	13.50	20.00
27–39	225	13.00	19.00

The minimum number of senior citizens needed for the outing to go ahead is 10; there cannot be more than 36 senior citizens on the outing. A minimum of two carers must go on the outing, with an additional carer needed if more than 24 senior citizens go on the outing. Carers do not have to pay anything for the outing. Work out the total cost and the cost per person for the senior citizens.

TASK 2 – Record who is going on the outing and how much has been paid.

Using your results from TASK 1, record the names of the people on the outing and the amount they have paid; include the carers on the outing. If there are spare places on the coach then extra people can be added; they are charged the same price as the other senior citizens. Calculate the total amount of money collected. Print out a list of the people on the outing.

TASK 3 – Identify the break-even point or profit that will be made on the outing.

Show whether the outing has made a profit or has broken even using the estimated cost from TASK 1 and the money collected from TASK 2.

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